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Tools Used: MYSQL, DBeaver, MySQL Workbench, Looker Studio, Google Sheets.

Project Type: SQL-Based Business Intelligence Project.

Zomato Restaurant Data Analysis: Exploratory Analysis of Restaurants, Menus, and Customer Order Patterns

Introduction

The rapid growth of online food delivery platforms has changed the way people discover restaurants and order food. Zomato, one of the leading food delivery platforms, generates a large amount of data related to restaurants, menus, cuisines, and customer orders. Analyzing this data helps businesses understand customer preferences, market trends, and overall performance.

This project focuses on analyzing Zomato's restaurant and order data using SQL to extract meaningful business insights. The main goal is to understand how restaurants perform across different cities, which cuisines are most popular, and how customer demand varies over time. The project also explores restaurant ratings, rating counts, and pricing patterns to understand customer perception and competitive positioning.

In addition to restaurant-level analysis, this project studies order trends such as monthly order volume and peak ordering periods. Where data is available, user-related factors like gender and income groups are also analyzed to understand ordering behavior. Due to some data limitations, such as missing order amounts and incomplete food-level order mapping, certain analyses are based on order frequency instead of total spending, and these limitations are clearly documented.

Overall, this project demonstrates how SQL can be effectively used to analyze real-world business data, handle data inconsistencies, and generate actionable insights. The findings from this analysis can help food delivery platforms like Zomato improve decision-making related to marketing, restaurant partnerships, and customer experience.

Research Questions

- What are the top 10 restaurants by total sales amount?
- What is the average rating and total rating count for restaurants in the top 20 cities?
- What are the monthly order trends based on order volume over time?
- What are the top 5 most popular cuisines by order volume?
- What is the distribution of vegetarian vs non-vegetarian items ordered?
- What are the top 20 cities by the number of restaurants?
- How do different user demographics correlate with average order value?
- Who are the top 15 highest-spending users?
- What are the top 15 cuisines with the highest average menu prices?
- Which restaurants offer the most diverse menu, based on the number of unique cuisines and dishes available?
- What are the most ordered food items across all restaurants?
- How does spending behaviour differ between genders?
- On which days of the week do restaurants experience peak order volumes?
- How does order frequency vary across different income groups?

Descriptions of Data

The dataset used in this project contains information related to restaurants, menus, food items, users, and order activity on the Zomato platform. It is organized into multiple tables, each capturing a specific aspect of the food delivery ecosystem:

- **Users:** Contains customer-related details such as user ID, gender, age, income, and city. This table helps analyze user demographics and ordering behavior.
- **Restaurants:** Includes restaurant-specific information such as restaurant ID, name, city, average rating, and total rating count. This data is used to study restaurant distribution, popularity, and customer perception across different locations.
- **Menu:** Stores details of food items offered by restaurants, including cuisine type, food ID, and price. This table enables analysis of cuisine popularity, menu pricing, and menu diversity.
- **Food:** Provides information about individual food items, including food name and classification as vegetarian or non-vegetarian. This table supports dietary preference analysis.
- **Orders:** Records order-level activity, including order ID, user ID, restaurant ID, and order date. Due to missing order amount values, order frequency is used for behavioral analysis instead of spending-based metrics.

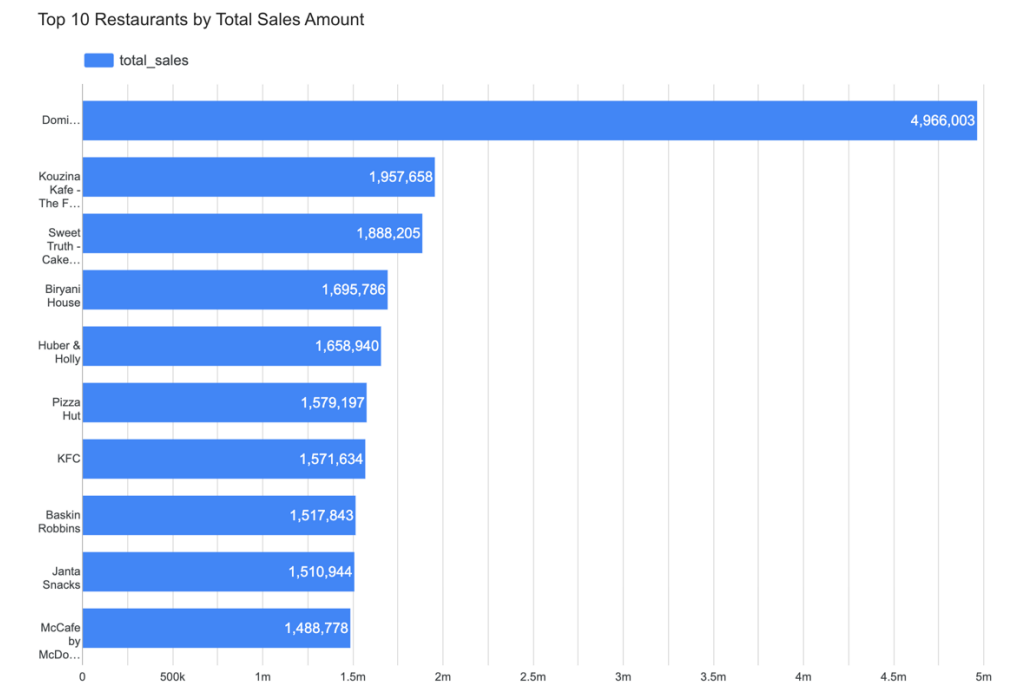
What graph type(s) are we going to use?

- **Horizontal Bar Chart** – Used to compare top restaurants, cuisines, and cities clearly by ranking values.
- **Vertical Bar Chart** – Used to show category-wise comparisons like cuisine popularity in a simple visual form.
- **Line Chart (Time Series)** – Used to analyze monthly order trends and identify seasonal patterns over time.
- **Area Chart** – Used to emphasize growth and decline in order volume across months.

- **Pie Chart / Donut Chart** – Used to show proportional distribution of vegetarian vs non-vegetarian orders.

Description in a form of Visualization:

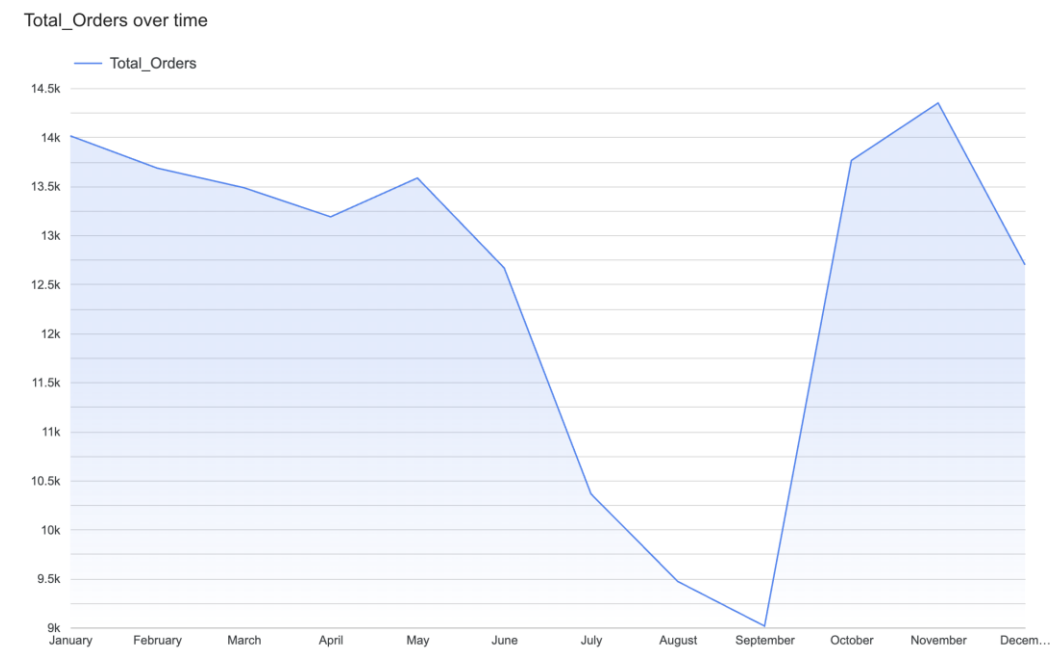
1. **Description:** This analysis identifies the restaurants that generate the highest total sales on the Zomato platform by summing all order values for each restaurant. It helps understand which restaurants contribute most to overall revenue.



Findings: A small group of restaurants dominates total sales, with a clear gap between the top performer and the rest. Well-known brands and high-demand restaurants consistently appear in the top positions.

Conclusion: Zomato's revenue is highly concentrated among a few top restaurants. These restaurants should be prioritized for premium partnerships, promotions, and exclusive deals.

2. **Description:** This analysis examines how the total number of orders changes month by month, helping to understand seasonal patterns and customer demand trends over time.

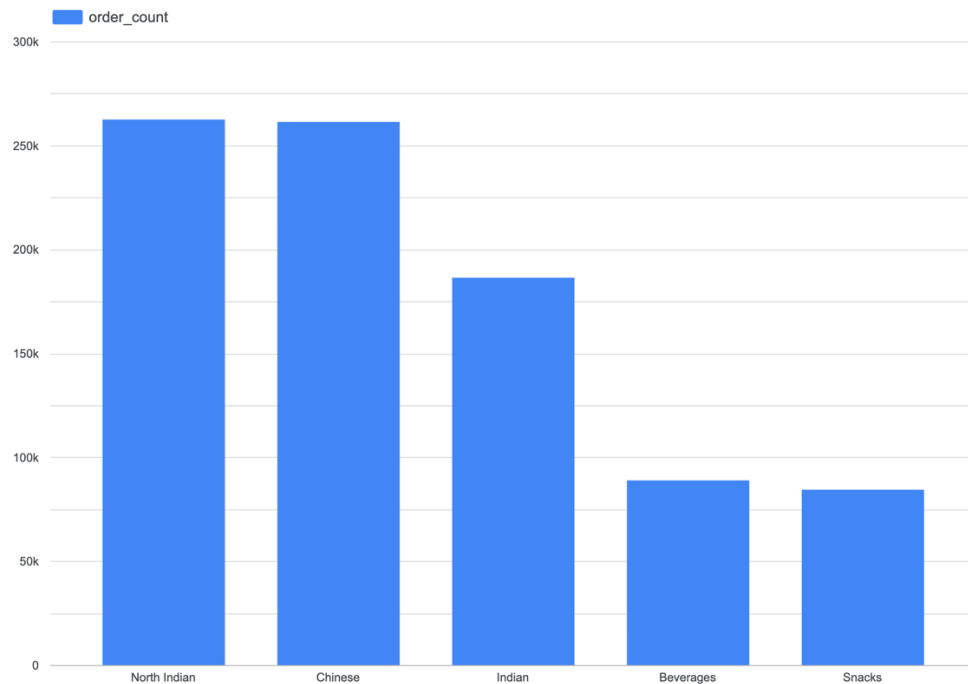


Findings: Orders fluctuate across months, with noticeable peaks during certain periods and dips during others. This indicates seasonal demand and customer behavior changes throughout the year.

Conclusion: Monthly trends show clear seasonality in food ordering. Zomato can use this insight to plan marketing campaigns, discounts, and resource allocation during high- and low-demand months.

3. **Description:** This analysis ranks cuisines based on the total number of orders placed, revealing customer food preferences on the platform.

Top 5 Most Popular Cuisines by Order Volume

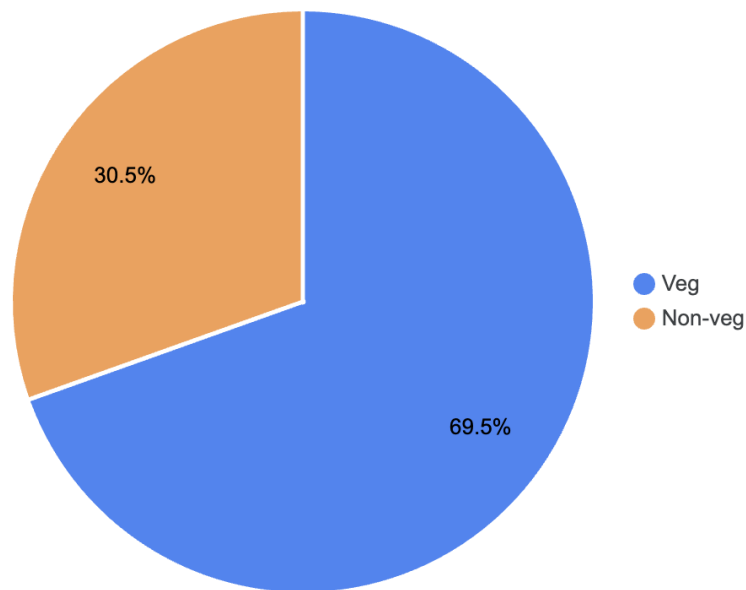


Findings: A few cuisines such as North Indian, Chinese, and Indian dominate order volume, while other cuisines have significantly lower demand.

Conclusion: Customer preferences are strongly skewed toward a few popular cuisines. Zomato should focus onboarding and promoting restaurants offering these cuisines while strategically growing niche cuisine segments.

4. **Description:** This analysis compares the total number of vegetarian and non-vegetarian food orders to understand dietary preferences of customers

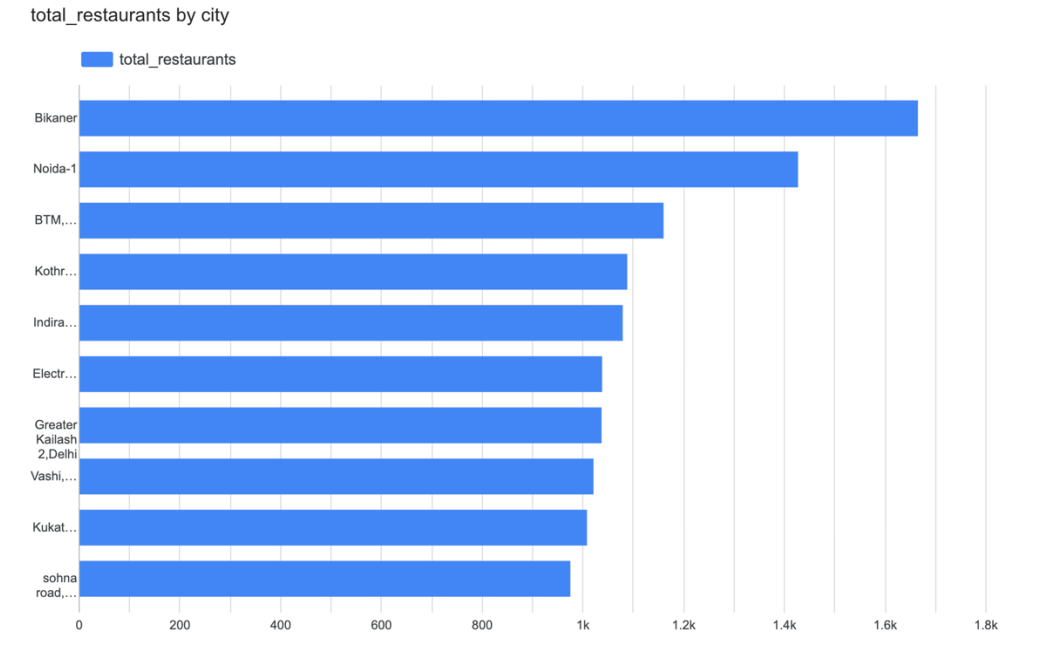
veg_or_non_veg by total_orders



Findings: Vegetarian orders form a significantly larger share compared to non-vegetarian orders, indicating strong demand for vegetarian food on the platform.

Conclusion: Vegetarian food plays a major role in Zomato's business. Increasing visibility of vegetarian options and improving veg-specific filters can enhance customer satisfaction and order volume.

5. **Description:** This analysis counts the number of restaurants in each city to identify regions with the highest restaurant density on Zomato.



Findings: A few cities have a very high concentration of restaurants, while many others have relatively fewer listings. These cities act as major business hubs for the platform.

Conclusion: Zomato's presence is strongest in specific cities. Expansion strategies should focus on underrepresented cities while strengthening services in high-density markets.

Business Analysis and Insights

❖ Zomato Business Problems:

1. What are the top 10 restaurants by total sales amount?
2. What is the average rating and total rating count for restaurants in the top 20 cities?
3. What are the monthly order trends based on order volume over time?
4. What are the top 5 most popular cuisines by order volume?
5. What is the distribution of vegetarian vs non-vegetarian items ordered?
6. What are the top 20 cities by the number of restaurants?
7. How do different user demographics correlate with average order value?
8. Who are the top 15 highest-spending users?
9. What are the top 15 cuisines with the highest average menu prices?
10. Which restaurants offer the most diverse menu, based on the number of unique cuisines and dishes available?
11. What are the most ordered food items across all restaurants?
12. How does spending behaviour differ between genders?
13. On which days of the week do restaurants experience peak order volumes?
14. How does order frequency vary across different income groups?

The screenshot shows a database management tool interface with a dark theme. On the left, a 'SCHEMAS' sidebar lists various databases and tables, including 'employees', 'employees_backup', 'onboard', 'sales', 'sys', and 'zomato_db'. The 'zomato_db' database is selected, showing a tree of tables like 'food', 'menu', 'restaurants', 'users', 'Views', 'Stored Procedures', and 'Functions'. The main area displays a SQL query in a text editor:

```
1 use zomato_db;
2
3 # Q1> What are the top 10 restaurants by total sales amount?
4
5 Select restaurants.name, sum(orders.sales_amount) AS total_sales from orders
6 JOIN
7   restaurants ON orders.r_id = restaurants.id
8 where orders.sales_amount Is Not Null
9 Group By restaurants.name
10 order by total_sales Desc
11 Limit 10;
```

Below the query editor, the 'Result Grid' shows the top 10 restaurants by total sales. The results are as follows:

name	total_sales
Dominos Pizza	4966003
Kouzma Kafe - The Food Court	1907608
Shwet Trich - Cakes and Desserts	1885005
Bryant House	1695786
Huber & Holly	1658940
Pizza Hut	1591917
KFC	1571834
Basim Robbins	1517843
Lavita Snacks	1510444
McCafe by McDonald's	1486778

At the bottom, the 'Action Output' section shows a log of database actions and their responses, including queries for restaurant counts and sales data.

rough*

Zomato_1

zomato_2

Limit to 1000 rows

Q2 > What is the average rating and total rating count for restaurants in the top 20 cities?

select restaurants.city, concat(round(avg(rating),2) ,'/5') as avg_rating, sum(rating_count) as total_rating_count from restaurants

Inner JOIN

(select restaurants.city, count(city) as Total_restaurants from restaurants

Group By restaurants.city

order by total_restaurants DESC Limit 20) as top_cities ON restaurants.city = top_cities.city

Group By restaurants.city ;

100%

28:23

Result Grid

Filter Rows: Search

Export:

city	avg_rating	total_rating_co...
Koramangala,Bangalore	4.08/5	48930
HSR,Bangalore	4.02/5	42526
Indiranagar,Bangalore	4.14/5	61836
BTM,Bangalore	3.93/5	37254
Electronic City,Bangalore	3.92/5	32322
Bikaner	4.04/5	69916
Laxmi Nagar,Dehi	3.87/5	19592
Greater Kailash 2,Dehi	3.99/5	33111
Malviya Nagar,Dehi	4/5	28524
sohna road,Gurgaon	3.98/5	28643
Madhapur,Hyderabad	3.82/5	34764
Kukatpally,Hyderabad	3.58/5	30892
Central Kolkata,Kolkata	4.19/5	31368
Gomti Nagar,Lucknow	3.88/5	23824
Vashi,Mumbai	4.01/5	28368
Bandra West,Mumbai	4.2/5	31176
Raj Nagar,Noida	3.79/5	17492
Noida-1	3.87/5	44491
Kothrud,Pune	4.08/5	31240
Baner,Pune	4/5	30953

Result 54

rough*Zomato_1zomato_2*

Limit to 1000 rows

575859606162636465666768

Q6> What are the top 20 cities by the number of restaurants?

select restaurants.city, count(restaurants.id) as restaurants_count from restaurants
Group By restaurants.city
Order By restaurants_count DESC
Limit 20;

100%10:66

Result GridFilter Rows:SearchExport:Fetch rows:

city	restaurants_cou...
Bikaner	1666
Noida-1	1428
BTM,Bangalore	1161
Kothrud,Pune	1089
Indiranagar,Bangalore	1080
Electronic City,Bangalore	1039
Greater Kailash 2,Delhi	1038
Vashi,Mumbai	1022
Kukatpally,Hyderabad	1009
sohna road,Gurgaon	976
Koramangala,Bangalore	954
Gomti Nagar,Lucknow	921
Malviya Nagar,Delhi	901
HSR,Bangalore	898
Madhapur,Hyderabad	893
Raj Nagar,Noida	852
Baner,Pune	814
Bandra West,Mumbai	796
Central Kolkata,Kolkata	790
Laxmi Nagar,Delhi	787

Result 55

rough*Zomato_1zomato_2

Limit to 1000 rows

```
88
89 # Q9> What are the top 15 cuisines with the highest average menu prices?
90 select menu.cuisine as cuisine_names, round(avg(menu.price),2) as avg_menu_price from menu
91 where menu.price is not null
92 Group By menu.cuisine
93 order by avg_menu_price DESC
94 limit 15;
95
```

100% 1:97

Result Grid Filter Rows: Search Export: Fetch rows:

cuisine_names	avg_menu_pri...
Healthy Food,Snacks	2229.60
Thai,Italian	761.22
Middle Eastern,Desserts	626.73
Beverages,Combo	576.01
Sushi,Japanese	532.33
Bakery,Biryani	525.00
North Indian,Middle Eastern	523.84
Indian,Bakery	488.65
Desserts,Italian	475.46
North Indian,Barbecue	475.24
Pan-Asian,Japanese	470.14
Chaat,Salads	465.80
Bakery,Juices	450.83
Combo,Chinese	446.35
Rajasthani,Combo	423.14

rough*Zomato_1zomato_2

Limit to 1000 rows

```
98 # Q10> Which restaurants offer the most diverse menu, based on the number of unique cuisines and dishes available?
99
100 select restaurants.name as restaurant_name,
101 count(Distinct menu.food_id) as total_food,
102 count(distinct menu.cuisine) as total_cuisine
103 from menu
104 JOIN restaurants ON menu.restaurant_id = restaurants.id
105 Group By restaurants.id, restaurants.name
106 order by total_food desc , total_cuisine desc;
```

100% 49:106

Result Grid Filter Rows: Search Export: Fetch rows:

restaurant_name	total_food	total_cuisine
Hungry Kya	479	1
Food Fusion	462	1
Parosa	446	1
New Mehfil Restaurant	436	1
Parosa	402	1
Honest	400	1
PUJA SWEETS BHALUBASA	400	1
Charotar	397	1
Palatine Restaurant And Banquet	396	1
Jiva Hotel	395	1
Daya Hari Mithai	395	1
Indian Curry House	395	1
Chopsticks	392	1
Chulah Matka Biryani Kitchen	388	1
De'Ganges Restro Cafe	385	1
Sardar Foods	384	1
Choice Snack Bar	383	1
Crazy Bite	381	1
Biryani Kitchen & Bengali sweets	378	1
Deepthi Veg and nonveg Resta...	375	1

Result 62

roughZomato_1zomato_2

Limit to 1000 rows

109# Q11> What are the most ordered food items across all restaurants?

110

111 • select food.item,

112 count(*) as order_count from orders

113 Join restaurants ON orders.r_id = restaurants.id

114 Join menu ON restaurants.id = menu.restaurant_id

115 Join food ON menu.food_id = food.f_id

116 Group By food.item

117 Order By order_count DESC;

118

100%1:118

Result Grid

Filter Rows: Search

Export:

Fetch rows:

item	order_count
Jeera rice	6188
Veg Fried Rice	5917
Paneer butter masala	5910
FRENCH FRIES	4231
Dal Fry	4147
Butter Naan	3961
Chicken Fried Rice	3702
Veg biryani	3647
Cold Coffee	3539
DAL MAKHANI	3002
EGG FRIED RICE	3002
Veg pulao	2894
PLain Rice	2836
Garlic naan	2766
Shahi Paneer	2759
Green Salad	2593
Butter Roti	2524
Paneer tikka	2459
Plain Naan	2433
Chana Masala	2408

Result 63


```

6
7   # Q12 > How does spending behavior differ between genders?
8   • SELECT
9       users.gender,
10      COUNT(*) AS total_orders
11  FROM orders
12  JOIN users
13      ON orders.user_id = users.user_id
14  WHERE users.gender IS NOT NULL
15  GROUP BY users.gender
16  ORDER BY total_orders DESC;

```

22:15

Result Grid



Filter Rows:

Search

Export:



gender	total_orders
Male	85927
Female	64354

rough

Zomato_1

zomato_2



Limit to 1000 rows



133

```

134   # Q13 > On which days of the week do restaurants experience peak order volumes?

```

```

135   • select  dayname(orders.order_date), count(*) as total_orders from orders
136   group by dayname(orders.order_date)
137   order by total_orders desc;

```

138

100% 80:134

Result Grid



Filter Rows:

Search

Export:



dayname(orders.order_da...	total_orders
Friday	35293
Thursday	29598
Tuesday	29486
Wednesday	29021
Monday	26345
Saturday	408
Sunday	130

```

# Q 14 > How does order frequency vary across different income groups?
SELECT
CASE
WHEN users.income < 300000 THEN 'Low Income'
WHEN users.income BETWEEN 300000 AND 700000 THEN 'Medium Income'
ELSE 'High Income' END AS income_group,
COUNT(*) AS total_orders
FROM orders
JOIN users ON orders.user_id = users.user_id
WHERE users.income IS NOT NULL
GROUP BY income_group
ORDER BY total_orders DESC;

```

ThankYou!

Overall Conclusion

This Zomato data analysis project provides a clear understanding of how food delivery businesses operate from a sales, customer preference, and geographic perspective. The analysis shows that a small number of restaurants contribute a large portion of total sales, highlighting revenue concentration. Monthly order trends reveal seasonal patterns, indicating that customer demand changes throughout the year. Popular cuisines such as North Indian and Chinese dominate order volume, reflecting strong and consistent customer preferences. The comparison of vegetarian and non-vegetarian orders shows a higher inclination toward vegetarian food, which is an important insight for menu planning and promotions. City-level analysis highlights key urban areas where restaurant density and competition are highest. Overall, the project demonstrates how data-driven insights can support better decision-making in marketing, partnerships, and expansion strategies. This analysis also showcases the practical use of SQL and data visualization tools to solve real-world business problems. The findings can help Zomato optimize growth, improve customer experience, and strengthen its market position.